The aim of this study is to determine the vascular plant diversity of forest vegetation in Türkmendağ and to reveal vegetation-environmental relationships. The sampling was done using the Braun-Blanquet method in 95 grids. Two subplots were sampled in each grid. Plant groups were determined by hierarchical classification clustering analysis. The relations between plant groups and environmental variables were examined by non-parametric test statistics. Alpha, beta and gamma ($\alpha$, $\beta$, $\gamma$) values, which are the species diversity indices of plant groups and sample areas were calculated. The interrelationships among the diversity components ($\alpha$, $\beta_w$ and $\gamma$) of the sample areas, and the site factors were analysed by regression tree method. The best regression tree model was built by tree layer, shrub layer, slope, RI, limestone and altitude respectively. According to statistical analysis, the same variables played dominant roles for the distribution of plant groups. When we evaluate all three plant species diversity components together, plant groups endowed with the highest species diversity are Group 1, Group 2, Group 4 and Group 8.